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Earth has more than enough wind to power the entire world, at least technically, two new studies find. But the research looks only at physics, not finances. Other experts note it would be too costly to put up all the necessary wind turbines and build a system that could transmit energy to all consumers. The studies are by two different U.S. science teams and were published in separate journals. They calculate that existing wind turbine technology could produce hundreds of trillions of watts of power. That's more than 10 times what the world now consumes.

Wind power doesn't emit heat-trapping gases like burning coal, oil and natural gas. But there have been questions, raised in earlier studies, about whether physical limits would prevent the world from being powered by wind. The new studies, done independently, showed potential wind energy limits wouldn't be an issue. Money would be. "It's really a question about economics and engineering and not a question of fundamental resource availability," said Ken Caldeira, a climate scientist at the Palo Alto, Calif., campus of the Washington-based Carnegie Institution for Science. He is a co-author of one of the studies; it appeared Sunday in the journal Nature Climate Change.

Caldeira's study finds wind has the potential to produce more than 20 times the amount of energy the world now consumes. Right now, wind accounts for a tiny fraction of the energy the world consumes. So to get to the levels these studies say is possible, wind production would have to increase dramatically.

If there were 100 new wind turbines for every existing one, that could do the trick says, Mark Jacobson, a Stanford University professor of civil and environmental engineering.

Jacobson wrote the other study, published in the Proceedings of the National Academy of Sciences. It shows a slightly lower potential in the amount of wind power than Caldeira's study. But he said it still would amount to far more power than the world now uses or is likely to use in the near future. Henry Lee, a Harvard University environment and energy professor who used to be energy chief for the state of Massachusetts, said there are a few problems with the idea of wind powering the world. The first is the cost is too high. Furthermore, all the necessary wind turbines would take up too much land and require dramatic increases in power transmission lines, he said. Jerry Taylor, an energy and environmental analyst at the conservative Cato Institute, said the lack of economic reality in the studies made them "utterly irrelevant." Caldeira acknowledged that the world would need to change dramatically to shift to wind. "To power civilization with wind turbines, I think you're talking about a couple wind turbines every square mile," Caldeira said. "It's not a small undertaking."

Electricity Pricing – Sep 18, 2012

	On-Peak	Off-Peak
2012	\$0.03272	\$0.02202
2013	\$0.03746	\$0.02443
2014	\$0.03912	\$0.02552

LMP Electric Price

Time Period	Average per Kwh
Sep, 2011	\$0.03058
Oct, 2011	\$0.02968
Nov, 2011	\$0.02816
Dec, 2011	\$0.02971
Jan, 2012	\$0.03043
Feb, 2012	\$0.02963
Mar, 2012	\$0.02894
April, 2012	\$0.02659
May, 2012	\$0.02816
June, 2012	\$0.03089
July, 2012	\$0.04303
Aug, 2012	\$0.03112
Sep 1 thru Sep 17	\$0.03136

Extended Temperature Forecast:

Chicago Area

	Tue	Wed	Thu	Fri	Sat
High	64	72	73	64	63
Low	44	54	54	47	45

